

IV. *An Account of four Mock-Suns, seen at Kensington, March 1st 1726-7. By Mr. George Whiston.*

ON Wednesday, March 1st, 1726-7, walking in a Garden at *Kensington*, about a quarter after Ten, I happen'd to observe the following Appearance, which being very rare with regard to the whole of it, seems to deserve that some Account should be given of it.

I at first took notice of the Halo about the Sun, V. M. (Fig. 2.) with its usual Circumstances, which are pretty frequent; the upper part of it was very luminous, having a confus'd mixture of the Rainbow-Colours in it, and being touch'd at the Vertex with the two other Curvatures, OVR, NVT, in the Situation which the Scheme shews; tho' the latter Arch NVT, did not appear till some time after. The Bottom part of it also at M, which appear'd a little above the Horizon, had something of the same nature, but not in so great a degree.

I preceiv'd, presently likewise, the two *Parhelia*, A, B; whose Diameters were pretty large, and whose Brightness and Colour was pretty much as the upper part of the Halo.

As the Halo was at that time not quite perfect, but had some parts interrupted, I thought that the two *Parhelia* were in the Circumference of its Circle, as usual; but after about a quarter of an hour, I directly observ'd the Halo to pass between the *Parhelion A*, and the true Sun; and I have no reason to doubt the same

same of the other B, also, tho' I don't remember that I directly observ'd that.

The *Parhelia* A, B, therefore, which were but a little distant from the Circumference of the Halo, began now to appear with narrow, pale, whitish Streaks of Light, in the nature of Tails, proceeding from them; but soon extended themselves so far, that they met in the Point opposite to the Sun, and form'd the Great Circle, A B C D, parallel to the Horizon, whose Breadth was about half that of the Halo.

Upon viewing it carefully all round, I soon discover'd a third Mock-Sun, C, of a plain whitish Light, without any mixture of Colours, (which was also the Case of the whole great Circle,) and presently also a fourth, D, both of them pretty exactly resembling each other, (as the two first did themselves likewise,) very much inferior to the *Parhelia* A, B, in Brightness, tho' not so much in magnitude; for I estimate their Diameters to have been to the two first *Parhelia*, as 4 to 5.

As I had no opportunity of measuring the several Angles, I have plac'd the Mock-Suns, C, D, in the Scheme, rather in Agreement with former Observations, than my own Guesses; for they appear'd to me to be at a greater distance from each other, and nearer respectively to the two first *Parhelia*, which Difference M. *Huygens* attributes to the different Altitude of the Sun.

The Arch, NVT, not being very visible while the Great Circle was, and indeed not extending it self at any time near so far as to the *Parhelia*, or the Circumference of the great Circle, I could not determine by a direct Observation, whether the *Parhelia* A, B, appear'd in the Intersection of that Circle produc'd, with the great Circle; but the Curvature appear'd to me so plainly different from that, its Center not being,

I reckon,

I reckon, above M, that I cannot but believe the *Parbelia*, A, B, were neither in the Interlection of N V O, with the great Circle, A B C D, nor of the Halo with the same Circle, in one of which Circumstances they have hitherto appear'd; but between those two Points, and much nearer to the Circumference of the Halo.

I thought I saw plainly at one time likewise, a small Portion of a Secondary Halo, if I may so call it, as in the Scheme at P. It seem'd evidently to be an Arch of a Circle concentrical with the Halo, and ting'd with the Rainbow-Colours, whose Diameters might perhaps be to that of the Halo, as 4 to 3; but as it appear'd but for a little time, I would not be thought positive about it.

I don't at all remember, that during the time I watch'd it, I ever observ'd the great Circle A B C D, to be visible within the Halo, between A and B, tho' all the other part of it was sometimes very perfect.

This Face of the Heavens continued, tho' with an Interruption of some parts now and then, till about a quarter after eleven, when I left it, and could not return till about twelve, at which time the Sky was clouded over, (which had been before only hazy, a sure Criterion of these Appearances) and this Phænomenon no longer visible.

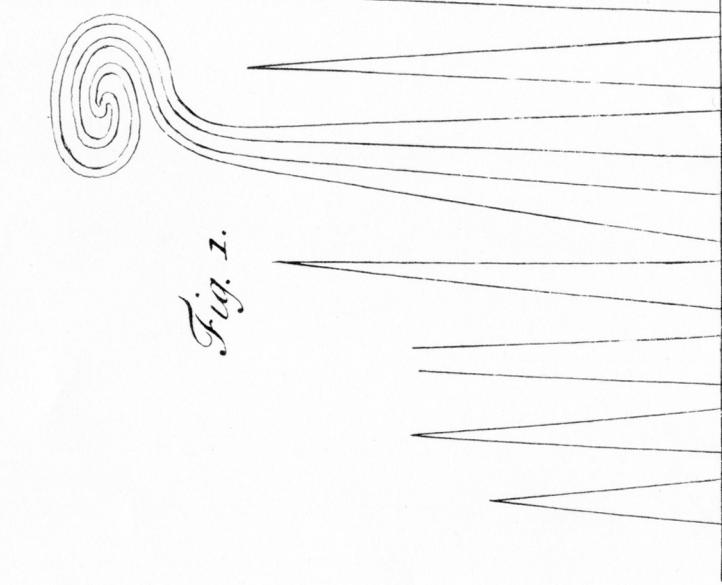


Fig. 1.

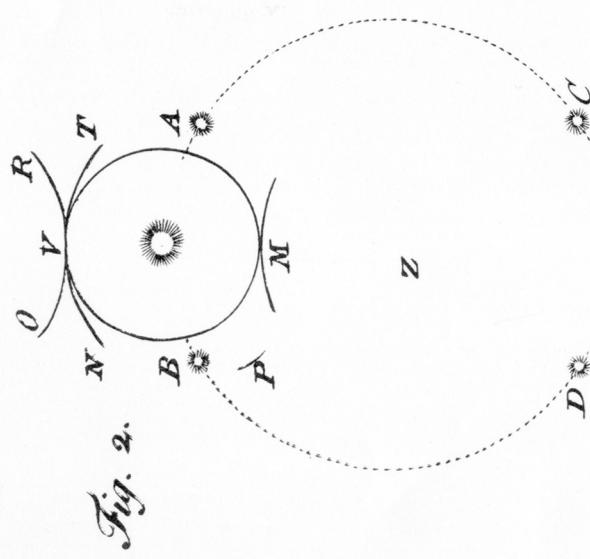


Fig. 2.



Fig. 3.

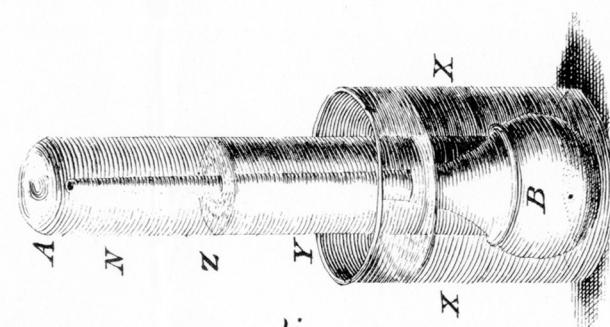


Fig. 5.

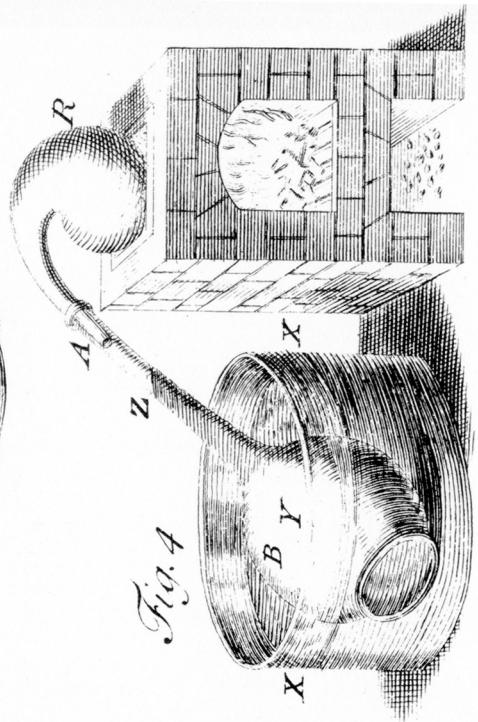


Fig. 4.